TOWN OF ASHLAND

Testimony of Steve Sylven

DTE 02-46

I. INTRODUCTION

Q: Please state your name, title and business address:

A: My name is Steve Sylven. I am a Senior Project Manager and Environmental Department Head at Vollmer Associates LLP, 38 Chauncy Street, Boston, Massachusetts 02111.

Q: What are your current responsibilities as Senior Project Manager and Environmental Department Head for Vollmer Associates?

A. As a Senior Project and Environmental Department Head at Vollmer Associates, I am responsible for environmental engineering projects consisting of sanitary sewer systems, pumping stations, comprehensive waste water management plans, and comprehensive storm water management plans. I prepare proposals and contract agreements, compose staff assignments, provide technical input, and monitor project progress and budget. I am also a client liaison.

Q: By whom were you most recently employed and in what capacity?

A. From 1996 to 2001, I was a Project Manager in the Engineering & Construction Department of the Massachusetts Water Authority in Boston, Massachusetts. As a Project Manager, I managed water and wastewater projects of varying complexity from inception through final design. This included conducting preliminary field investigations, determining the level of technical engineering services required for assigned projects, developing project conceptual design reports, estimating probable construction costs as well as the scope of services, project schedules, and requests

construction costs as well as the scope of services, project schedules, and requests for qualifications, forming and chairing committees to review qualifications and select consultants, negotiating contracts with selected consultants, monitoring consultants' work for compliance with contracts as well as scope of services, schedule and budget. I also performed QA/QC review of plans and specifications at various phases of design completion and met with consultants monthly to review project progress. I coordinated with other MWRA departments on project issues, assisted Procurement in advertising projects for bids, evaluated bids, negotiated awards of construction contracts, prepared staff summaries, contract amendments, addenda, and change orders and provided technical assistance on projects. I represented the Authority on engineering matters in dealing with community, state, and other governmental agencies; and supervised staff engineers.

From 1993 to 1996, I was a Project Manager with Clinton Bogert Associates in Providence, Rhode Island. As a part of the Design Management Team, along with Louis Berger & Associates for the Narragansett Bay Commission Combined Sewer Overflow Abatement Project, I was responsible for the engineering management of a consultant contract for the design of a 58-MGD CSO pumping station. I also monitored consultant's work for compliance with contract, scope of services, schedule and budget. I performed QA/QC review of plans and specifications at 30%, 60%, 90% and 100% phases of completion, met with a consultant monthly to review project progress, represented the organization on engineering matters in dealing with outside firms and public agencies, prepared technical engineering proposals in response to requests for qualifications and developed technical

proposals in response to requests for qualifications and developed technical approach, procedures, and costs for accomplishing work.

From 1988 to 1993, I was a Senior Environmental Engineer at Maguire Group, Inc. in Foxborough, Massachusetts. As a Senior Environmental Engineer, I was responsible for planning, permitting, designing, and preparing plans, specifications, and cost estimates for wastewater treatment facilities, sanitary sewers, pumping stations, force mains, water supply, storage, distribution and pumping projects. I served as client liaison, represented Maguire on engineering matters in dealing with community, state, and other governmental agencies, prepared technical engineering proposals in response to requests for qualifications, performed construction administration and resident engineer services, interfaced with and coordinated work other engineering disciplines, and supervised staff engineers and drafters.

From 1986 to 1988, I was a Staff Engineer with R.A. Cataldo & Associates, Inc. in Pawtucket, Rhode Island. As a Staff Engineer, I was responsible for planning, permitting, and designing infrastructure facilities, commercial developments, and residential subdivision projects, including grading and drainage, water, sewer, and storm drainage systems, pumping stations, ISDS, and road and parking lot design. I conducted field investigations in connection with the civil engineering phase of assigned projects, represented the organization on civil engineering matters dealing with local community planning board and conservation commission, and other government agencies. Additionally, I performed construction administration and inspection services and prepared technical engineering proposals in response to requests for qualifications.

requests for qualifications.

From 1985 to 1986, I was a Project Engineer with Castellucci Galli Corp. in Providence, Rhode Island. As a Project Manager, I planned, scheduled, coordinated and supervised the design of civil engineering components of land development projects, including industrial and commercial sites. I performed grading and road and parking lot design, water, sewer, and storm drainage system design, and prepared wetlands permits. As part of my responsibilities, I also coordinated work of other disciplines. In addition, I represented the organization on civil engineering matters dealing with outside firms, local community planning boards, and other government agencies.

From 1978 to 1985, I was a Senior Environmental Engineer a C.E. Maguire, Inc. in Providence, Rhode Island. As a Senior Environmental Engineer, I independently planned, scheduled, designed and prepared construction plans and specifications for complex environmental engineering projects including water storage and distribution systems, pipeline cleaning and lining, sewer systems, pumping stations, and water and wastewater treatment. I supervised work of other disciplines involved in the projects, represented the company in engineering matters dealing with clients, planning boards and State and Federal regulatory agencies and developed technical proposals.

From 1975 to 1978, I was a Project Engineer at Camp Dresser & McKee, Inc. in Suitland, Maryland. As a Project Engineer, I was responsible for facilities plans and design, cost estimating, and preparation of construction drawings and specifications for wastewater treatment plants. I also interfaced with clients and State and Federal

for wastewater treatment plants. I also interfaced with clients and State and Federal regulatory agencies.

From 1973 to 1975, I was a Project Engineer at Sverdrup & Parcel in Gainesville, Florida. As Project Engineer, I was responsible for design, cost estimating, and preparation of construction drawings and specifications for water and wastewater projects.

Note also that between September 1985 and May 1988, I was an Adjunct Professor at Roger Williams University in Bristol, Rhode Island. I taught courses in Water and Wastewater Treatment, Water Resources Engineering, and Fluid Mechanics.

Q: Where did you go to college, what degree do you have and when did you graduate?

A: I went to Rogers Williams College and graduated with a Bachelors of Science in Civil Engineering in 1971.

Q: Do you belong to any associations?

A: I am a member of the American Water Works Association, the Water Environment Federation and the Providence Engineering Society.

Q: Please describe for me all of the projects in which you were involved which concern waterworks, wastewater, stormwater, site planning and construction inspection and administration.

A. The following concerns my waterworks experience:

<u>Waterworks Experience</u>

I have been the Project Manager in charge of overseeing the rehabilitation of numerous water pumping stations for the Massachusetts Water Resources Authority. As Project Manager, I was responsible for the rehabilitation of 5 pumping stations:

5.8 MGD Belmont, 12.4 MGD Brattle Court, 11.9 MGD Hyde Park, 12.4 MGD Spring Street, and 6.0 MGD Reservoir Road. The work consisted of replacing existing pumps with larger capacity pumps, and architectural, structural, mechanical, electrical, and instrumentation upgrades.

I was Project Manager for the Sluice Gate Rehabilitation Phase II for the Massachusetts Water Resources Authority. As Project Manager, I was responsible for the rehabilitation of 10 historic gatehouse and waste weir structures, including replacement of 30 sluice gates.

I was Project Manager for water system improvements in Pawtucket, Rhode Island for the Pawtucket Water Supply Board. As Project Manager, I was responsible for the replacement of 22,00 feet of distribution piping ranging in size from 8 to 20 inch diameter, cleaning and lining 49,000 feet of distribution pipe and transmission mains ranging in size from 6 to 36 inch diameter, and 22,000 feet of new 24 inch diameter transmission main.

I was Project Manager for water system improvements in Newport, Rhode Island for the Newport Water Department. As Project Manager, I was responsible for the cleaning and lining 11,000 feet of distribution piping ranging in size from 12 to 20 inch diameter, and 18,400 feet of new distribution piping ranging in size from 8 to 12 inch diameter.

I was Project Manager for water system improvements on Block Island, New Shoreham, Rhode Island for the New Shoreham Water Department. As Project Manager, I was responsible for the design of a 150,000 gallon fiberglass coated steel water storage tank, 60 GPM package type water filtration plant, filter backwash

water storage tank, 60 GPM package type water filtration plant, filter backwash recovery system, and 1,700 feet of 10 inch diameter water transmission main.

I was Project Manager for water system improvements at An Shas Air Force Base in Cairo, Egypt for the United States Department of Agriculture. As Project Manager, I was responsible for the design of a distribution network of 7 miles of piping ranging in size from 6 to 24 inch diameter, a 150,000 gallon elevated water spheroid tank, well improvements, and a pump house chlorination facility comprised of a 264,000 gallon underground raw water storage tank, submersible turbine pumps, and a calcium hypochlorite chemical feed system for disinfecting of raw well water.

I was Project Manager on a water transmission main project in Woonsocket/Burrillville, Rhode Island for Bechtel Power Corporation. As Project Manager, I was responsible for the design of a pipeline to convey raw water from the Blackstone River in Woonsocket, Rhode Island to the Bechtel Power Plant in Burrillville, Rhode Island. The pipeline consisted of 10 miles of 16-inch diameter pre-stressed concrete cylinder and ductile iron pipe and 7 miles of parallel 6-inch diameter steel fuel oil pipe with containment casing.

I was Project Manager on a water main extension in Slatersville, Rhode Island for the Rhode Island Water Resources Board. As Project Manager, I was responsible for the design of a water main extension for the RI Water Resources Board from Slatersville, Rhode Island to Forestdale, Rhode Island. The pipeline comprised 6,000 feet of 12-inch ductile iron pipe and connection to an existing elevated water storage tank.

I was Project Manager forrehabilitation of the Branch Street Pumping Station in Pawtucket, Rhode Island for the Pawtucket Water Supply Board. As Project Manager, I was responsible for the restoration and renovation of a 100-year old water pumping station, including design of new pumping facilities comprised of five horizontal centrifugal pumps varying in capacity from 2,100 GPM to 6,250 GPM, 48-inch diameter suction piping, 36-inch diameter discharge piping, and valves and controls.

I was Project Manager for the evaluation of improvements to the Bath Street Water Pumping Station in Providence, Rhode Island for the Providence Water Supply Board. As Project Manager, I was responsible for the evaluation of the High Service Portion of the Providence Water Supply Board Low Service Transmission and Distribution System and the 8 MGD capacity Bath Street Water Booster Pump Station in Providence, Rhode Island. Engineering included a facilities needs assessment, conducting pump tests, and recommendations for increasing pumping capacity and transmission capabilities.

I was Project Manager for the evaluation of the Neutaconkanut Water Pumping Station in Providence, Rhode Island for the Providence Water Supply Board. As Project Manager, I was responsible for the evaluation of the 20.6-MGD Neutaconkanut Water Pumping Station that feeds the low service system of the Providence Water Supply Board system. Engineering included a facilities needs assessment, conducting pump tests, and recommendations for increasing pumping capacity.

I was Project Manager on a water storage tank in North Kingstown, Rhode Island for the North Kingstown Water Department. As Project Manager, I was responsible for the design of a 160-foot diameter 3.0 MG precast, pre-stressed concrete water storage tank with altitude valve and connecting water transmission main for the Town of North Kingstown, Rhode Island.

The following concerns my relevant wastewater experience:

Wastewater Experience:

I wasProject Manager for the Trayer Road PumpStation Replacement Project in Canton, Massachusetts for the Town of Canton. As Project Mana ger, I was responsible for the design and preparation of plans and specifications for a 150 gpm capacity self-priming pumping station to replace an antiquated pumping station. The Project included a 6-foot diameter pre-cast concrete wetwell and connecting gravity sewer and force main piping. I am currently responsible for construction administration and inspection services.

I am currently Project Manager on the Greenlodge Interceptor Sewer Replacement Project in Canton, Massachusetts for the Town of Canton. As Project Manager, I am responsible for the design and preparation of plans and specifications for replacing approximately 10,000 linear feet of 18-inch diameter asbestos cement interceptor sewer. The existing sewer is undersized and plagued by numerous misaligned joints, sags, cracks, mineral deposits, and root intrusion. The replacement interceptor sewer will be 30-inch diameter ductile iron pipe. The project requires special attention to conservation issues because it lies entirely within wetlands and a portion lies in an endangered species and rare habitat area.

lies in an endangered species and rare habitat area.

I was Project Manager on the Foxborough High School Sewer Connection Project in Foxborough, Massachusetts for the Town of Foxborough. As Project Manager, I was responsible for the design of a sanitary sewer service connection that allowed the high school to connect to the existing municipal sanitary sewer system and to abandon an existing wastewater treatment plant. The work included preparation of a feasibility report and design of 500 linear feet of 8 inch diameter gravity sewer, 200 GPM submersible pumping station and 1,700 feet of 4 inch diameter polyethylene pipe force main, and wetlands permitting.

I was Project Manager at the Naval Education and Training Center in Newport, Rhode Island for the U.S. Department of the Navy. As Project Manager responsible for the replacement of 1,800 linear feet of 8 and 12 inch diameter gravity sewers and installation of flow metering and instrumentation equipment in two existing pumping stations at the Naval Education and Training Facility, Defense Fuel Support Port, Newport, Rhode Island. Project required special provision for disposal of unsuitable material containing hydrocarbons.

I was Project Manager at the Naval Education and Training Center in Newport, Rhode Island for the U.S. Department of the Navy. As Project Manager, I was responsible for the preparation of contract documents for an odor control system to mitigate hydrogen sulfide odors at Pumping Stations 74A and 74B, Coddington Cove, Pier No. 2,. The odor control system is comprised of diaphragm metering pumps, 1,200-gallon polyester storage tank and piping for injecting hydrogen peroxide into the discharge force main and the wetwell of each pumping station.

peroxide into the discharge force main and the wetwell of each pumping station.

I was Project Manager at the Putri Nayle Resort in Lombok, Indonesia on a Phase II Master Plan, working for a private developer. As Project Manager, I was responsible for the design of wastewater collection, pumping, and treatment facilities for this 3,000-acre, 50,000-population resort. The facilities consist of 6.7 miles of gravity sewers ranging in size from 8 to 30 inch diameter, 7 pumping stations ranging in capacity from 0.4 MGD to 9.7 MGD, 1.8 miles of force main ranging in size from 16 to 36 inch diameter, and a 12.0 MGD facultative lagoon secondary wastewater treatment plant.

I was Project Manager at the East Street Pumping Station in New Haven, Connecticut for the City of New Haven. As Project Manager, I was responsible for the modifications to the 40 MGD influent pumping station, consisting of four horizontal centrifugal pumps, flow metering and instrumentation, electrically operated check valves and piping modifications.

I was Project Manager on the Willett Avenue Interceptor Sewer Project in East Providence, Rhode Island for the City of East Providence. As Project Manager, I was responsible for the design of 5,100 linear feet of 10-inch and 18-inch diameter prestressed concrete cylinder pipe interceptor sewer to eliminate excessive infiltration/inflow.

I was Project Manager on the Watchemoket Interceptor Sewer Project in East Providence, Rhode Island for the City of East Providence. As Project Manager, I was responsible for the restoration and rehabilitation of elevated manhole structures on the 27-inch diameter main truck line to the East Providence Wastewater

on the 27-inch diameter main truck line to the East Providence Wastewater Treatment Plant. The work included by-pass pumping, patching, filling, lining and coating interior and exterior surfaces of concrete manhole structures. I also provided construction administration and inspection services.

I was Project Manager on the Mettatuxet/Envine Estates Sewer Extension Project in Narragansett, Rhode Island for the Town of Narragansett. As Project Manager, I was responsible for the design of a gravity sewer system consisting of 7,500 linear feet of 8-inch diameter pipe. Engineering included Coastal Resources Management Council permitting. Project was funded by the Mettatuxet/Envine Estates Sewer Committee and the RIDEM Sewage and Water Supply Failure Fund (SWSFF).

I was Project Manager on the Valetine Street Sewer Extension Project in Fall River, Massachusetts for the City of Fall River. As Project Manager, I was responsible for the design of 1,500 linear feet of 8-inch diameter gravity sewer, 80 GPM pneumatic ejector station, and 400 feet of 4-inch diameter force main.

I was Project Manager on the Pier and Shore Improvements Project in Ford Island, Pearl Harbor, Hawaii for the U.S. Department of the Navy. As Project Manager, I was responsible for the design of wastewater collection, pumping, and conveyance improvements as part of pier improvements to wharf F-5 berthing of the Battleship Missouri, for the Department of Navy, Pacific Division, Naval Command, Ford Island, Pearl Harbor, HI. The design included replacing 900 linear feet of 15-inch diameter gravity sewer pipe with 18 inch diameter pipe to increase flow capacity; retrofitting a pumping station to accommodate additional flow, and 600 feet of 12 inch diameter water distribution piping.

inch diameter water distribution piping.

I was Project Manager at the Fort Kamehameha Wastewater Treatment Plant in Pearl Harbor, Hawaii for U.S. Department of the Navy. As Project Manager, I was responsible for the design of $27 million in improvements to the existing activated sludge plant. Design included an 80-foot diameter secondary clarifier with inboard launders, return and waste activated sludge pumping station, process piping and flow distribution structure, and special provisions for bypassing flow to maintain discharge permit limitations during construction. I conducted initial field reconnaissance, attended review meetings, responded to review comments and finalized project.

I was Project Manager at the Bourne Marina in Bourne, Massachusetts for the Town of Bourne. As Project Manager, I was responsible for the design of wastewater collection, pumping and conveyance facilities to convey wastewater from the Bourne Marina to the Massachusetts Maritime Academy Wastewater Treatment Plant in Bourne, Massachusetts. The facilities included 700 linear feet 8-inch diameter gravity sewer, 60 GPM pneumatic ejector station, and 2,600 feet of 4-inch diameter force main.

I was Project Manager on the Tollgate High School Sewer Project in Warwick, Rhode Island for a private developer. As Project Manager, I was responsible for a design study for reconstructing the existing gravity sewer to accommodate additional flow from an adjacent shopping plaza. Engineering included closed circuit television inspection and flow monitoring, and calculation of hydraulic carrying capacity of the existing sewer.

capacity of the existing sewer.

I was Project Engineer at the Lorton Penal Institution in Lorton, VA for the Town of Lorton. As Project Engineer, I was responsible for the design of improvements to upgrade an existing primary treatment plant to a 1.0 MGD secondary treatment facility. The facilities include screening and degritting, extended aeration basins, secondary clarifiers, chlorine contact tank with effluent cascade, chlorine disinfection equipment, aerobic digester, return and waste sludge pumping facilities, sludge dewatering by centifugation, chemical conditioning equipment, and process piping.

I was Project Manager at the East Street Wastewater Treatment Plant in New Haven, Connecticut for the City of New Haven. As Project Manager, I was responsible for the design of a 40 MGD screening and degritting facility consisting of by-pass structures and diversion gates, fine and coarse catenary bar screens, chain and bucket grit collectors, aerated grit chambers, and a serpentine conveyor belt system all contained in new building.

I was Project Manager at the Plainfield Village Wastewater Treatment Plant in Plainfield, Connecticut for the Town of Plainfield. As Project Manager, I was responsible for the design of sludge handling modifications consisting of a 25-foot diameter gravity thickener, waste sludge pumping station, a flow control structure, and process piping.

I was Project Manager at the Plainfield North Wastewater Treatment Plant in Plainfield, Connecticut for Town of Plainfield. As Project Manager, I was responsible for the design of sludge handling facilities consisting of a 1.0 meter belt

responsible for the design of sludge handling facilities consisting of a 1.0 meter belt filter press, chemical storage and pumping equipment, and sludge holding tank and feed pumps, all housed in a new 8,000 square foot sludge handling building.

I was Project Manager at the South Kingstown Wastewater Treatment Facility in Narragansett, Rhode Island for the Town of South Kingstown. As Project Manager, I was responsible for the design of modifications to the existing primary, secondary and septage sludge holding tanks to preclude stratification of sludge, mitigate odors, and degrit septic waste. Modifications included a diffused aeration system, aerated grit chamber with chain and bucket grit collector, potassium permangenate odor control system, and piping.

I was Project Manager at the Westerly Wastewater Treatment Facility in Westerly, Rhode Island for the Town of Westerly. As Project Manager, I was responsible for the design of a diffused aeration system to preclude sludge stratification in the existing sludge holding tanks.

I was Project Engineer for a facilities plan at the Warwick Wastewater Treatment Facility in Warwick, Rhode Island for the City of Warwick. As Project Engineer, I was responsible for evaluating alternatives for handling septic wastes dumped at the plant. I developed preliminary design and cost analysis for septage treatment facilities consisting of a septage receiving station, aerated grit chambers, grit collectors, aeration basins and secondary clarifiers.

I was Project Engineer at the Wastewater Treatment Facility in Waterbury, Connecticut for the City of Waterbury. As Project Engineer, I was responsible for a facilities plan for this 28 MGD secondary treatment plant. I developed preliminary

facilities plan for this 28 MGD secondary treatment plant. I developed preliminary design and cost analysis for nitrification/dentrification facilities, chlorination/dechlorination facilities, influent and intermediate screw pump stations, and retrofitting primary settling tanks and final clarifier

I was Project Engineer at the Plainfield North Wastewater Treatment Facility in Plainfield, Connecticut for the City of Plainfield. As Project Engineer, I was responsible for the development of preliminary design and cost analysis for a two-stage nitrification process to achieve tertiary treatment.

I was Project Engineer at the Leonardtown Wastewater Treatment Facility in Leonardtown, Maryland for the Town of Leonardtown. As Project Engineer, I was responsible for a facilities plan for a 1.0 MGD secondary treatment plant. I developed preliminary design and cost analysis for treatment process utilizing earthen bank lagoons.

I was Project Manager for the City of Boston Street Furniture Program for Wall USA, Inc. (for Boston Redevelopment Authority). As Project Manager, I was responsible for preparation of drawings and obtaining approval for installation of fiveautomated public toilets at City Hall Plaza, Puopolo Park, Charlestown Navy Yard, Boston Public Library, and New England Aquarium in the City of Boston. These pre-assembled toilets are the first of their kind in the United States, and required extensive permitting. The work included sewer, water, telephone, and electrical connections.

The following is my relevant stormwater experience:

Stormwater Experience:

I was Project Manager on a Cambridgeport Roadway Improvements Project in Cambridge, Massachusetts for the Cambridge Community Development Department. As Project Manager, I was responsible for this joint effort project with Montgomery Watson Harza, coordinating field survey, geotechnical services, and hazardous materials investigations, as well as preparation of design and contract drawings for the storm drainage system. The project included roadway reconstruction, separation of the existing combined sewer system through the installation of new gravity sewer mains, drainage trunk lines and sewer/drainage structures.

I was Project Manager for drainage improvements at Backbay Yard in Boston, Massachusetts for the City of Boston Parks and Recreation Department. As Project Manager, I was responsible for design, bid assistance, and construction administration for drainage improvements to the Backbay Yard. This Project included separation of sewer and storm drain systems in an environmental and historically significant area of the Muddy River.

I was Project Manager on a Comprehensive Storm Water Management Plan Project in Ashland, Massachusetts for the Town of Ashland. As Project Manager, I was responsible for all project activities, including field survey, creation of a Geographic Information System map and integrated Infrastructure Management Plan that will provide the Town with the information necessary to comply wit the EPA Phase II Storm Water Regulations.

Storm Water Regulations.

I was Project Manager on a Comprehensive Storm Water Management Plan Project in Canton, Massachusetts for the Town of Canton. As Project Manager, I was responsible for all project activities including field survey, creation of a Geographic Information System map and integrated Infrastructure Management Plan that will provide the Town with the information necessary to comply wit the EPA Phase II Storm Water Regulations.

I was Project Engineer on the Central Artery/Tunnel Project in Boston, Massachusetts for MassHighway. As Project Engineer, I was responsible for the preparation of storm water runoff calculations and preliminary drainage system design for the Ventilation Building Site for the Central Artery/Tunnel Project Contract D009A.

I was Project Engineer for the Central Artery/Tunnel Project in Boston, Massachusetts for the MassHighway. As Project Engineer, I was responsible for the design of Storm Water Pumping Stations 1 and 2 to handle the 50-year storm runoff of 70 CFS and 105 CFS, respectively, for the Central Artery/Tunnel Project Contract D009A. Each pump station comprises two vertical turbine mixed flow pumps to handle the peak flow, and two submersible pumps to handle normal storm water runoff.

I was Project Engineer for the Central Artery/Tunnel Project in Boston, Massachusetts for MassHighway. As Project Engineer, I was responsible for the design of various tide gate and outfall structures for the Central Artery/Tunnel Project Contract D009A.

Project Contract D009A.

The following is my relevant site planning experience:

Site Planning Experience

I was Project Engineer responsible for the site design, grading, drainage, permitting, and infrastructure facilities for Stevens Farm South, a 34-acre residential subdivision in Dudley, Massachusetts, working for a private client.

I was Project Engineer at the United Parcel Service in Warwick, Rhode Island for the United Parcel Service. As Project Engineer, I was responsible for the site design, grading, drainage, permitting, and infrastructure facilities for a 25.7-acre site and 322,500 SF distribution facility. Storm drainage system includes a unique storm water retention design consisting of 544 precast concrete leaching galleys beneath the parking lot to store the net increase in surface runoff.

I was Project Engineer at Rhode Island Central Food Warehouse in Cranston, Rhode Island for the State of Rhode Island. As Project Engineer, I was responsible for the site design, grading, drainage, permitting, and infrastructure facilities for a 3.05-acre site with a 40,000 SF building.

I was Project Engineer at Hasbro's office building in East Providence, Rhode Island for Hasbro Company. As Project Engineer, I was responsible for the site design, grading, drainage, permitting, and infrastructure facilities for a 100,000 SF building situated on 13 acres of land in the Narragansett Industrial Park.

I was Project Engineer for Executive Plaza, a commercial/retail center in Fall River Massachusetts. I was responsible for the site design, grading, drainage, and infrastructure facilities.

infrastructure facilities.

The following is my construction inspection and administration experience:

Construction Inspection and Administration Experience

I was responsible for construction administration and inspection forwater system improvements in Pawtucket, Rhode Island consisting of the replacement of 22,00 feet of distribution piping, cleaning and lining 49,000 feet of distribution pipe and transmission mains, and 22,000 feet of new 24 inch diameter transmission main.

I was responsible for construction administration and inspection for water system improvements in Newport, Rhode Island consisting of cleaning and lining 11,000 feet of distribution piping and 18,400 feet of new distribution piping.

I was responsible for construction administration and inspection for water system improvements in Block Island, Rhode Island consisting of a 150,000 gallon fiberglass coated steel water storage tank, 60 GPM package type water filtration plant, filter backwash recovery system, and 1,700 feet of 10 inch diameter water transmission main.

I was responsible for construction inspection and administration of a sanitary sewer service connection at Foxborough High School in Foxborough, Massachusetts that allowed the high school to connect to the existing municipal sanitary sewer system and to abandon an existing wastewater treatment plant.

I was responsible for construction administration and inspection for the Watchemoket Interceptor Sewer Project in East Providence, Rhode Island consisting of restoration and rehabilitation of elevated manhole structures on the 27-inch diameter main truck line to the East Providence Wastewater Treatment Plant.

diameter main truck line to the East Providence Wastewater Treatment Plant. I was responsible for construction administration and inspection for the Mettatuxet/Envine Estates Sewer Extension Project in Narragansett, Rhode consisting of a 7,500 linear feet gravity sewer system. I was responsible for construction administration and inspection for the Valetine Street Sewer Extension Project in Fall River, Massachusetts consisting of 1,500 linear feet of gravity sewer, 80 GPM pneumatic ejector station, and 400 feet of force main.

Q: When did Ashland retain Vollmer Associates? For what purpose?

A: Ashland retained Vollmer in November 2001 to evaluate the SEA Consultants, Inc.'s May 2001 Sewer Rate Assessment Study ("SEA Report").

Q: Are you familiar with the InterMunicipal Agreement dated December 9, 1963 (the "IMA") governing Ashland's use of Framingham's sewerage facilities which was signed by representatives of both Ashland and Framingham?

A: Yes.

Q: What did the IMA provide?

A: The IMA was an agreement between Ashland and Framingham which detailed Ashland's usage of certain sewers of Framingham which were to be used for the transportation of Ashland's sewerage to the sewers of the Metropolitan District Commission (which is now the Massachusetts Water Resources Authority ("MWRA").

Specifically, the IMA permitted Ashland to connect its sewerage system to the Framingham system at the Farm Pond intercepting sewer. Ashland's use of the Framingham system was to be limited to a maximum rate of discharge of 2.0 million

Framingham system was to be limited to a maximum rate of discharge of 2.0 million gallons per day (or 1400 gallons per minute) of Ashland sewerage with the exception that momentary discharge rates are not to exceed 2.5 million gallons per day (or 1750 gallons per minute for period not in excess of five minutes. In consideration of this usage, Ashland is to pay Framingham an annual charge of $3,000 for the usage of up to one million gallons of the average daily flow of Ashland sewerage. If Ashland sewerage exceeds one million gallons, Ashland agreed to Framingham in addition to the $3,000.00 annual charge mentioned a charge of $2,000 for actual usage above one million gallons of average daily flow.

Q: Does the IMA permit Ashland to connect to Framingham's sewerage system at any other points?

A: Yes. The IMA permits Ashland to connect to the Framingham sewerage system at the 12" sewer located at the Boston and Albany Railroad at the junction of the Bates Road. Ashland's usage at this connection is limited and restricted to a maximum rate of discharge of 200 gallons per minute of Ashland sewerage. Ashland agreed to pay Framingham $2,500 in exchange for this usage.

Q: Did the IMA permit the parties to review and renegotiate these charges and rates?

A: Yes. The parties agreed that the annual charges and rates of discharge specified in the agreement were to be reviewable five years from the date of this agreement and at subsequent five year intervals.

Q: Did the IMA specify how it could be terminated?

A: Yes. The IMA stated that it could terminate "when and if and at such time as Town of Ashland shall directly enter the Metropolitan District Commission system (it is

of Ashland shall directly enter the Metropolitan District Commission system (it is now the MWRA as I stated above) at which time the obligations of either party hereunder shall terminate."

Q: Has Ashland entered the MWRA system directly?

A: No.

Q: Has Framingham produced to the DTE any documents which were exchanged between Ashland and Framingham prior to December 9, 1998 pertaining to "annual charges and rates of discharge" to be applied after December 9, 1998?

A: None that I am aware of.

Q: What did SEA's Report state?

A: SEA attempted to determine what was Ashland's "fair and equitable proportionate share of the actual cost of the maintenance of the system" ("Ashland Cost") as required by the IMA. SEA determined that this should be measured by taking the Ashland flow of sewerage as compared to the total Framingham sewer system flow multiplied by the actual costs of maintaining the Framingham system less capital expenditures, MWRA fees and pumping station costs. SEA's formula as detailed below yielded $203,000 as Ashland's Cost:

$$\frac{\text{Ashland Flow} = (0.77)}{\text{(Framingham Flow (8.023) + Ashland Flow (0.77) = Total Flow= 8.793)}} \text{ X Framingham O\& M Costs } (\$2,316,814)$$

Q: What did Vollmer determine?

A: Vollmer stated that Ashland's proportionate share of operation and maintenance (O&M) cost should be based on only the sewers that it shares (Farm Pond Interceptor, Bates Road Sewer and Beaver Dam Interceptor). In its report, Vollmer

Interceptor, Bates Road Sewer and Beaver Dam Interceptor). In its report, Vollmer estimated that its proportionate share of the O&M cost for the shared sewers was approximately $16,858.00 . This is based on the product of the portion of the Framingham system that Ashland uses (3.04%), Ashland's portion of Interbasin Transfer Allocation compared to the total of Framingham's plus Ashland's Interbasin Transfer Allocation (11.19%) and the operating budget for the gravity sewer system ($4,957,656). Vollmer utilized the $4,957,656 figure provided by Framingham's Department of Public Works to Ashland in August and October 1998. Vollmer later adjusted its calculations by using the O&M costs provided by SEA in table 4.1 of its 2001 report to Framingham and utilized the O&M costs of $2,316, 814 provided therein.

Q: How did Vollmer determine the formula you just described?

A: The formula Vollmer used was as follows:

> **(3.04%) (the percentage of total inch-miles of sewerage pipeline that are actually used by Ashland) X (11.19%) (the ratio of Ashland's Interbasin Transfer Allocation (3.20 MGD) / Total of Ashland's Interbasin Transfer Allocation (3.2 MGD) + Framingham's InterBasin Transfer Allocation (25.39)) X Framingham's O&M costs = Ashland's proportionate share of operation and maintenance (O&M) cost**

This formula was derived from Framingham's Department of Public Works' manager and also Water and Sewer Superintendent and shared with Ashland in faxes dated August 6, 1998 and October 21, 1998.

Q: Is Ashland billed directly by the MWRA for transport and treatment of its flow at MWRA facilities?

A: Yes.

Q: Does Vollmer agree with Framingham's formula as proposed by SEA?

A: No. Vollmer disputes the premise for Framingham's calculations and Vollmer disputes Framingham's ultimate determination that Ashland's "fair and equitable proportionate share of the actual cost of the maintenance of the system" that Ashland uses ("Ashland's Cost) should be $203,000 or higher. Framingham bases its formula above solely based on a percentage of sewerage flow through the entire Framingham system. However, Ashland does not use the entire Framingham system.

Q: What parts of the Framingham system does Ashland use?

A: Ashland utilizes from Arthur Street to Beaver Street, Beaver Street to Waverley Street, Waverley Street to the Farm Pond Connection, Beaver Street to Herbert Street, Herbert Street to Eames Street and Eames Street to Guild Road. I will refer to these as the "shared sewer pipelines."

Q: So does Ashland utilize Framingham's entire sewerage system?

A: No. Ashland only utilizes these few specific pipelines mentioned above.

Q: Do these pipelines interact with the rest of Framingham's sewerage system or do they flow directly to the MWRA?

A: These pipelines flow directly to the MWRA and do not interact with the rest of Framingham's sewerage system.

Q: Which of the segments you mentioned are operated and maintained by Ashland?

A: None of these segments is operated and maintained by Ashland.

Q: Does Ashland simply utilize Framingham's pipes in these segments or does Ashland utilize pump stations and other infrastructure?

A: Ashland simply utilizes the pipe segments. Ashland does not utilize any pump stations or other infrastructure which is part of the Framingham system.

Q: How does Ashland propose that Ashland's Cost (its "fair and equitable proportionate share of the actual cost of the maintenance of the system") be calculated? Does Vollmer agree with this proposal?

A: Ashland contends that Ashland's Cost should be based on proportionate flow through those sewer pipes actually used and not simply on percentage of sewerage flow as if Ashland were using the entire Framingham system. Ashland should not be responsible for the operation and maintenance of Framingham's entire system. Based on this method, Ashland's Cost determined by this formula yields an Ashland Cost of $7,881.00 for fiscal year 2001. This is the same formula proposed by Vollmer and which, as I have mentioned, was originally provided to Ashland in 1998 by Framingham:

Percentage of Ashland's Usage of Inches/Miles of Framingham Sewerage Pipe (3.04%) X

Ratio of Ashland's InterBasin Transfer allocation (3.20 MGD) X Framingham's (28.59 MGD)

Framingham's O&M cost ($2,316,814)

Unlike SEA's formula which is based on percentage of flow and yielded an Ashland Cost of $203,000, Ashland's formula based on shared sewer use yields an Ashland Cost of $7,881. Vollmer agrees with this proposal.

Q: Why do you believe that this method of calculation is more appropriate than that determined by Framingham?

A: Ashland proposed formula is more appropriate because it is more accurate. Ashland is a wholesale customer to Framingham. Framingham and Ashland agreed to the cost of Ashland's usage of Framingham's sewerage system on a blanket basis. Framingham did not seek to calculate and charge the cost of usage of its system to each of Ashland's citizens. Rather, it is understood that Ashland's usage of Framingham's system was at a cost which Framingham knew that Ashland would then bill out to its citizens.

Further, Framingham should not be permitted to treat Ashland just like a Framingham citizen who is billed at a standard rate which is applied to all Framingham citizens regardless of how much or how little pipeline and infrastructure each citizen actually uses. Unlike with Framingham citizens, it is not too onerous to determine Ashland's actual pipeline usage and actual proportionate flow through those shared pipeline segments. By using actual inch-miles of sewer and a proportion of actual Ashland flow to Framingham flow through those specific shared segments, a more accurate measurement can be obtained.

Q: What is the significance of the ratio of Ashland's InterBasin Transfer Allocation ("ITA") to Framingham's ITA?

A: As I have already stated, Ashland should be only responsible for the cost of operating and maintaining those 85.89 inch/miles of sewer pipe segments that it actually uses. Further, Ashland should not be responsible for entire cost to operate and maintain these shared sewer pipe segments because these are **shared** sewer pipe segments. Both Ashland's and Framingham's sewage flows through these shared

segments. Both Ashland's and Framingham's sewage flows through these shared sewer pipe segments. Ashland should only be responsible for the cost of operating and maintaining the shared sewer pipe segments with Ashland's proportionate sewage flow through these pipes taken into account as well.

Unfortunately, to date, we do not have measurements of Ashland's and Framingham's respective percentage of flow through these shared sewer pipe segments. As an alternative, Ashland proposed using the ratio for the maximum allowable flow indicated in its ITA (3.20 MGD) in comparison to the total of Framingham's and Ashland's ITA (28.59).

Q: Should Ashland be responsible for future capital costs to the shared pipelines segments?

A: Vollmer believes that if Ashland is to be responsible for such costs, it should be responsible for only a fair and equitable proportionate share of the costs of repairs as well as capital improvements to those parts of the system that Ashland directly utilizes but only to the extent that such capital improvements are a direct and current benefit to Ashland. For example, Ashland should not have to pay for capital costs due to Framingham's decision to increase the size of the pipeline due to changes in Framingham's flow. This statement is conditioned upon Ashland having input into and veto power over all such capital improvement decisions. Ashland proposes that such repairs and capital improvements should be calculated based on the cost for such repairs and capital improvements multiplied by the ratio of Ashland's average daily flow through the directly affected pipe segment to Framingham's average daily flow through the directly affected pipe segment. Of course, Ashland should not be

responsible for payment of cost to Framingham where Framingham can or has obtained governmental funding for the cost of repair and/or capital improvements. Vollmer questioned the "Approximately Ashland Use %s" values in Table 6.2 of the SEA Report. It is not evident how the percentages of use were derived and SEA has failed to clarify this. Vollmer believes that a fair and equitable capital value should be based on the capacity of the pipe, i.e., the proportion of IMA flow to full flow capacity. SEA's Report indicates that the full flow capacity of the Farm Pond Interceptor and the Beaver Dam Interceptor is 15.0 MGD and 2.0 MGD, respectively. The average flow in the Farm Pond Interceptor and the Beaver Dam Interceptor is 0.63 and 0.12 MGD, respectively. Therefore, the "Approximately Ashland Use % would be 4.2% for Farm Pond Interceptor and 6.0% for Beaver Dam Interceptor. These values used in Table 6.2 would result in a buy-in value of $214,000 v. $767,500.

Q: The SEA Report states that the new IMA should contain a formula to establish Ashland's proportionate share for capital repairs for infrastructure related to the conveyance of Ashland IMA flows in the Framingham sewer system. The cost would be based on the product **of the ratio of Ashland IMA Peak Flow in the sewer to Framingham Peak Flow in the facility and the Actual Construction Cost. Do you agree with this recommendation?**

A: We agree with proportioning cost of "capital repairs" based on flow (and shared segment usage versus usage of the entire Framingham system), but question whether it should be based on peak flow. The study states "the IMA currently guarantees capacity to the peak level." This language is not in the current IMA. The IMA makes reference to "limited and restricted to a maximum rate of discharge." Maximum flow should not be construed to mean peak flow as they have different

meaning. Maximum flow is defined as the "maximum daily flow rate that occurs over a 24-hour period based on annual operating data." Additionally, the study says that "capital maintenance" should be apportioned on the basis of peak flow "in order to handle peak flows generated by Ashland." Vollmer does not believe that there should be a distinction made for capital repairs to handle peak flow. The proportionate share of capital repair costs should be for all capital repairs to shared sewers, whether it's to provide additional capacity or not. We suggest a fair and equitable share of the capital repair cost should take into account a proportion of average daily flow.

Q: Is Vollmer aware of any governmental funding received by Framingham to pay for the Framingham's sewer rehabilitation costs in the past?

A: Vollmer has learned from the DEP that Framingham received State Revolving Funds for sewer rehabilitation in 1991 and 1994 in the amounts of $420,000 and $411,000 respectively. While Vollmer and Ashland believe that Framingham has received additional funding for repairs and capital costs, Framingham has not been forthcoming with this information.

Q: Is Vollmer aware of any other governmental funding provided to Framingham to pay for Framingham's sewer rehabilitation costs?

A: Framingham has responded that it has been "unable to determine" this information.

Q: Are you aware of any actual harm caused to Framingham's sewerage system caused by the emission of hydrogen sulfide into Framingham's sewerage system?

A: No.

Q: Are you aware as to whether the IMA addresses the exclusion of hydrogen sulfide or any other natural substances contained in sewerage material?

A: The IMA does not exclude sulfide of any other natural substances contained in sewerage material.

Q: Does the IMA address the emission of hydrogen sulfide contained in sewerage material?

A: The IMA states that Ashland agreed to indemnify and hold harmless Framingham from "any and all increased charges levied against the Town of Framingham, if any, by the Metropolitan District Commission (now the MWRA). . . ."

Q: Are you aware of any increased charges levied against Framingham by the MWRA as a result of Framingham's permitting Ashland to use its sewer trunk-lines?

A: No. In fact, a MetroWest Daily article dated November 21, 2002 specifically stated "State regulators have agreed not to levy stiff fine against the town for exceeding sulfide levels in sewer system, potentially saving the town thousands over the next several years. In an agreement between the town [of Framingham] and the Massachusetts Water Resources Authority, the state agreed to hold back on the fines, provided the town make a good faith effort to solve the problem."